

**REMARKS**

This Application has been carefully reviewed in light of the Final Office Action mailed January 3, 2007 ("*Office Action*"). Claims 1-28 are pending in the Application, and the Examiner rejects all pending claims. Applicant respectfully requests reconsideration and favorable action in this case.

**I. 35 U.S.C. §102 Rejections:**

The Examiner rejects Claims 1-28 under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 5,809,133 issued Bartkowiak et al. ("*Bartkowiak*"). Applicant respectfully traverses this rejection and submits that *Bartkowiak* does not describe, expressly or inherently, each and every limitation of the claims.

Consider Applicant's independent Claim 1, which recites:

A method for detecting a received signal comprising:  
determining a set of particles each modeling a potential signal generated by a transmitter;  
measuring a received signal from the transmitter;  
calculating a probability for each of the particles, the probability for a particle indicating likelihood of the potential signal modeled by the particle based upon the received signal;  
redistributing the particles within a space of potential signals that may be generated by the transmitter based upon the probabilities;  
selecting one of the particles based upon the distribution of the particles within the space of potential signals; and  
outputting the potential signal modeled by the selected particle.

Applicant appreciates the Examiner's consideration of and response to Applicant's previously submitted arguments. In response, Applicant more fully explains why *Bartkowiak* fails to disclose, at least: (1) determining a set of particles each modeling a potential signal, (2) calculating a probability for each of the particles, and (3) redistributing the particles within a space of potential signals that may be generated by the transmitter based upon the probabilities, as required by Claim 1.

**A. *Bartkowiak* fails to teach determining a set of particles each modeling a potential signal.**

Applicant respectfully maintains that *Bartkowiak* fails to teach "determining a set of particles each modeling a potential signal," as required by Claim 1. As teaching these aspects, the *Office Action* points to *Bartkowiak*, column 3, lines 26-36, which states that "the

DTMF detector receives a plurality of digital samples of a received signal.” *Office Action*, p. 2; *Bartkowiak*, col. 3, ll. 26-27. The *Office Action* explains:

[T]he examiner equates the particles to the digital samples (col. 3, line 27) and also stating that the digital samples model the “received signal” (col. 3, line 27), which can equate to the potential signal. It is believed that from more clearly pointing out what represents the particles and the potential signal, the *Bartkowiak* reference teaches “determining a set of particles each modeling a potential signal generated by a transmitter”.

*Office Action*, p. 5 (sic). Applicant respectfully disagrees.

First, even assuming, for the sake of argument, that *Bartkowiak*’s digital samples teach the “particles” and *Bartkowiak*’s received signal teaches the “potential signal,” the reference still fails to disclose “determining a set of particles each modeling a potential signal,” as required by the claim. Digital samples that, when taken together, model the received signal (*see id.*) do not teach digital samples that each, taken individually, model the received signal. Accordingly, Applicant respectfully submits that *Bartkowiak* fails to teach, or even suggest, “determining a set of particles each modeling a potential signal,” as required by Claim 1.

Moreover, Applicant submits that *Bartkowiak*’s received signal fails to teach, or even suggest, the claimed “potential signal.” Claim 1 requires both “measuring a received signal from the transmitter” and “determining a set of particles each modeling a potential signal generated by a transmitter.”

Thus, *Bartkowiak* does not describe, expressly or inherently, “determining a set of particles each modeling a potential signal,” as required by Claim 1. Independent Claims 10, 19, and 28 include limitations that, for substantially similar reasons, are not taught by *Bartkowiak*. Because *Bartkowiak* does not disclose, expressly or inherently, every element of independent Claims 1, 10, 19, and 28, Applicant respectfully requests reconsideration and allowance of Claims 1, 10, 19, and 28 and their respective dependent claims.

**B. *Bartkowiak* fails to teach calculating a probability for each of the particles.**

Applicant also respectfully maintains that *Bartkowiak* fails to teach “calculating a probability for each of the particles, the probability for a particle indicating likelihood of the potential signal modeled by the particle based upon the received signal,” as required by

Claim 1. As teaching these aspects, the *Office Action* points to *Bartkowiak*, column 3, lines 1-5. *Office Action*, pp. 2, 5-6.<sup>1</sup>

First, Applicant respectfully submits that the cited portion of *Bartkowiak* fails to teach “calculating a probability for each of the particles.” As teaching the “particles,” the *Office Action* points to *Bartkowiak*’s digital samples (described on column 3, line 27). *Id.* at p. 5. Accordingly, Applicant assumes that the *Office Action* points to *Bartkowiak*, column 3, lines 1-5 as teaching “calculating a probability for each of the [digital samples],” as would be required by the claim. However, the cited portion of *Bartkowiak* states: “For each received frame, the present invention performs a portion of the Goertzel DFT algorithm,” (*Bartkowiak*, col. 3, ll. 1-3) and, in *Bartkowiak*’s disclosure, “each frame comprises a plurality of digital samples.” *Id.*, col. 2, ll. 53. Thus, even assuming, for the sake of argument, that performing a portion of the Goertzel DFT algorithm teaches “calculating a probability,” *Bartkowiak* fails to teach performing a portion of the Goertzel DFT algorithm for each of the digital samples. Accordingly, *Bartkowiak* fails to teach, or even suggest, calculating a probability for each of the particles, as required by Claim 1.

Second, Applicant respectfully submits that the cited portion of *Bartkowiak* fails to teach “the probability . . . indicating likelihood of the potential signal . . . based upon the received signal.” As teaching the “potential signal,” the *Office Action* points to *Bartkowiak*’s received signal (described on column 3, line 27). *Office Action*, p. 5. However, the cited portion of *Bartkowiak* fails to teach, or even suggest, “calculating a probability . . . the probability indicating a likelihood of the [received signal] . . . based upon the received signal,” as would be required

Thus, *Bartkowiak* does not describe, expressly or inherently, “calculating a probability for each of the particles, the probability for a particle indicating likelihood of the potential signal modeled by the particle based upon the received signal,” as required by Claim 1. Independent Claims 10, 19, and 28 include limitations that, for substantially similar reasons, are not taught by *Bartkowiak*. Because *Bartkowiak* does not disclose, expressly or inherently, every element of independent Claims 1, 10, 19, and 28, Applicant respectfully requests reconsideration and allowance of Claims 1, 10, 19, and 28 and their respective dependent claims.

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<sup>1</sup> The *Office Action* states, “According to the specification the probability in the claims determines ‘the likelihood that a received signal matches to the particles selected by distribution module.’” *Office Action*, p. 6. To the extent this statement attempts to provide a definition for “probability,” Applicant respectfully traverses.

**C. *Bartkowiak* fails to teach redistributing the particles within a space of potential signals that may be generated by the transmitter based upon the probabilities.**

Applicant further respectfully maintains that *Bartkowiak* fails to teach “redistributing the particles within a space of potential signals that may be generated by the transmitter based upon the probabilities,” as required by Claim 1.

As teaching these aspects, the *Office Action* points to *Bartkowiak*, column 3, lines 40-55. *Office Action*, pp. 2, 6.<sup>2</sup> The *Office Action* states:

[I]t should be obvious to one skilled in the art, that the particles are redistributed and analyzed before a selection takes place. However, the cited passage (see col. 3, ll. 40-55) also shows the process of analyzing all the energy calculations taking place before selection is made of the samples with the highest energy values. Therefore, the above function can also equate “redistributing the particles within a space of potential signals that may be generated by the transmitted based upon the probabilities.”

*Id.* at p. 6. Applicant respectfully disagrees.

First, the cited portion of *Bartkowiak* fails to teach “redistributing the particles within a space of potential signals,” as required by the claim. The cited portion of *Bartkowiak* states:

During the frequency spectrum calculations, the DTMF detector first calculates a portion of the Goertzel algorithm, i.e., calculates the algorithm for a subset of the samples for each frequency, to produce intermediate or interim energy values. The DTMF detector then analyzes the interim accumulated energy values and determines if the energy values are all low values and are substantially similar.

*Bartkowiak*, col. 3, ll. 40-55. Applicant respectfully submits that this portion of *Bartkowiak* still fails to teach, or even suggest, redistributing anything, much less redistributing the particles within a space of potential signals that may be generated by the transmitter based upon the probabilities. As noted above, the *Office Action* points to *Bartkowiak*’s digital samples (described on column 3, line 27) as teaching the “particles.” *Office Action*, p. 5. Accordingly, in order to teach these claimed aspects, *Bartkowiak* would need to teach “redistributing the [digital samples] within a space of potential signals.” This is simply not taught by the reference.

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<sup>2</sup> The *Office Action* states, “According to the claims, this limitation takes place before the selecting of the particles takes place.” *Office Action*, p. 6. Applicant respectfully traverses and notes that Claim 1’s method steps may take place in any appropriate order.

Second, the *Office Action* appears to rely on inherency to teach these claimed aspects. Applicant respectfully submits that the *Office Action*'s statements are conclusory, mischaracterize the teachings of *Bartkowiak*, and are insufficient to meet the burden of proof for establishing inherency.

The M.P.E.P. sets forth the strict requirements for a showing of inherency, stating: "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." M.P.E.P. § 2112 (citing *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original)). The M.P.E.P. also clarifies that:

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

M.P.E.P. § 2112 (citations removed) (emphasis original).

In the present case, the rejection based on inherency fails for at least two reasons. First, the *Final Office Action* has failed to "provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." For this reason alone, the rejection based on inherency fails. Second, Applicant submits that the lack of reasoning to support the determination of inherency reflects the deficiency of the teachings in the reference. The "missing descriptive matter" is not necessarily present in *Bartkowiak*, as would be required for a successful rejection based on inherency.

Thus, *Bartkowiak* does not describe, expressly or inherently, "redistributing the particles within a space of potential signals that may be generated by the transmitter based upon the probabilities," as required by Claim 1. Independent Claims 10, 19, and 28 include limitations that, for substantially similar reasons, are not taught by *Bartkowiak*. Because *Bartkowiak* does not disclose, expressly or inherently, every element of independent Claims 1, 10, 19, and 28, Applicant respectfully requests reconsideration and allowance of Claims 1, 10, 19, and 28 and their respective dependent claims.

**CONCLUSION**

Applicant has made an earnest attempt to place the Application in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, Applicant respectfully requests full allowance of all pending claims. If the Examiner feels that a telephone conference or an interview would advance prosecution of the Application in any manner, the undersigned attorney for Applicant stands ready to conduct such a conference at the convenience of the Examiner.

Although no fees are believed to be currently due, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P.

Respectfully submitted,

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